Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands	)	WT Docket No. 03-66 RM-10586
	)	
Part 1 of the Commission's Rules - Further Competitive Bidding Procedures	)	WT Docket No. 03-67
	)	
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment to Parts 21 and 74 to Engage in Fixed Two-Way Transmissions	)	MM Docket No. 97-217
	)	
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico	)	WT Docket No. 02-68 RM-97118

Comments of The ITFS/2.5 GHz Mobile Wireless Engineering & Development Alliance, Inc. ("IMWED")

This filing is submitted by the ITFS/2.5 GHz Mobile Wireless Engineering & Development Alliance, Inc. ("IMWED") in response to the Commission's Notice of Proposed Rulemaking in the above-captioned matter.[1]

[1] Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands. 18 FCC 6722 (2003)

About IMWED

IMWED was formed early this year. Currently, it is composed of six organizations that are licensed to operate ITFS systems scores of communities nationwide, ranging in size from Chicago to Kona, Hawaii.[2] It is a non-profit organization intended to provide member licensees with technical and business assistance needed to convert their systems successfully to digital two-way mobile operation.

Specifically, IMWED's corporate purposes are: 1) to assist ITFS and other 2.5 GHz licensees in spectrum planning and technical coordination, including, without limitation, providing technical assistance and information to ITFS licensees; 2) to facilitate the successful conversion of ITFS and other 2.5 GHz band spectrum to two-way mobile digital use in a manner that fosters the long-term viability and independence of ITFS licensees; 3) to encourage the development of new technology that enables new and expanded educational uses of 2.5 GHz spectrum; and 4) to facilitate and encourage the entry of new competitors and new technology into the wireless broadband industry in the 2.5 GHz band.

IMWED members deliver a wide variety of ITFS services. For instance, North American Catholic Educational Programming Foundation produces original instructional programming in many academic subject areas, and it also grants to county and state correctional facilities reading/phonics courses to address high inmate illiteracy rates. Through its ITFS service, Instructional Telecommunications Foundation helps elementary and secondary schools to build libraries of instructional videos in wide array

[2] The members of IMWED are: Chicago Instructional Technology Foundation ("CITF"), Denver Area Educational Telecommunications Consortium ("DAETC"), Instructional Telecommunications Foundation ("ITF"), North American Catholic Educational Programming Foundation ("NACEPF"), Portland Regional

of school subjects. In addition to both public and private schools, DAETC provides video service to juvenile detention facilities in the Denver area, and CITF delivers video service not only to schools but also to Chicago's Children's Memorial Hospital.

IMWED's members have experience in secondary market transactions involving excess ITFS capacity for both video and data uses. They have been parties to excess capacity agreements with subsidiaries of a variety of well-known firms, including Sprint, BellSouth, WorldCom, Nucentrix, and Clearwire.

As the Commission recognizes, technical advances have greatly expanded the options available to ITFS licensees.[3] IMWED member organizations are looking forward to expanding their educational service to include data service (including mobile data service) for students, teachers, and educational institutions.

Introduction

The above-captioned rulemaking is clearly the most important to ITFS in the last 20 years. It considers many aspects of our service, and offers the prospect of opening vibrant new possibilities for ITFS, especially in mobile and data services. New technical rules are clearly needed in ITFS. But there is also a great deal of hazard in some of the ideas the Commission put forward for comment, especially such notions as allowing the sale of ITFS spectrum to for-profit entities, and two-sided auctions.

I. The Present Licensee Eligibility Rules for ITFS Licensing Should Be Retained.

Currently, ITFS eligibility is governed by Section 74.932(a) of the Commission's Rules, which specifies that the Commission will award an ITFS license to "an accredited

---

Educational Telecommunications Corporation ("PRETC"), and Twin Cities Schools' Telecommunications Group ("TCSTG").

[3] *Id*., paragraph 1.

institution or to a governmental organization engaged in the formal education of enrolled students or to a nonprofit organization whose purposes are educational…" [4]

This eligibility limit has established a unique preserve for education in the electromagnetic spectrum, and it remains a precious national patrimony. While ITFS licensees---and others in a similar position, like public TV and radio licensees---benefit from their eligibility, spectrum set-asides are, at bottom, not maintained for them; these reservations are made because of the benefits which flow to the public from spectrum that is devoted to non-profit and non-commercial purposes.

The principle that certain spectrum is set aside for public betterment, rather than private profit, has a long history. FM radio channels were the first to be reserved, in 1938, and the beginnings of broadcast television in America saw a concomitant campaign for the reservation of educational TV channels. This crusade was spearheaded by Commissioner Frieda Hennock, and it resulted in the extensive noncommercial reservations contained in the Commission's Sixth Report and Order on broadcast television in 1952.[5]

Though perhaps no topic in telecommunications policy is without controversy, IMWED is convinced that the reservation of public television and radio channels has paid extensive public dividends in the United States. Public broadcasting service has brought information and culture to the citizenry that would have been absent without it---and, indeed, *was* absent in the 1930's and 1940's when noncommercial outlets were rare.

---

[4] Under comparatively rare circumstances, which apply chiefly to rural areas, commercial entities are able to hold licenses for ITFS spectrum. See Section 74.990 of the Commission's Rules.

[5] See, Barnouw, Eric, *The Golden Web, A History of Broadcasting in the United States 1933 – 1953* (1968), pp. 293 – 295. According to this source, the idea of non-commercial reservation was not without critics at the time: "[Trade journal] *Broadcasting* considered the idea 'illogical, if not illegal.'" See also Witherspoon John and Kovitz Roselle, *A History of Public Broadcasting* (2000), pp. 9 – 11.

There are many indicators of public broadcasting's continued relevance, including the federal and state governmental funding still devoted to it.

The ITFS spectrum reservation was made in 1963. Traditionally, the ITFS set-aside has benefited the public because of the educational video services that schools, students, and teachers obtain from ITFS systems. Though data uses of ITFS remain in their early stages, we see the beginnings of a major new service regime; with revised technical rules, these early trickles of educational data service could grow into a flood.

Extensive examples of the educational benefits of ITFS---chiefly derived from its video traditions---are already in the record of a number of Commission proceedings. Though IMWED anticipates numerous similar filings will be made in response to the NPRM, we are focusing here on data uses of ITFS.

Should the eligibility restrictions be lifted, the unique benefits of ITFS will be lost, perhaps gradually or perhaps rapidly. Axiomatically, ITFS licensees will retain their authorizations or sell them according to their perception of their institutions' best interests. But here the public interest clearly diverges from the proprietary interests of those who hold licenses. The public's interest in the educational character of the spectrum is enduring, even if individual licensees can be enticed to give it up.

The Commission asks whether the delivery of educational programming via the Internet affects the need for an ITFS service operated by educational entities.[6] While video delivery by Internet may reduce the need for video delivery by ITFS, this is a very different issue than that of who should hold ITFS licenses. Discretion over how to build facilities and how to use them gives educators the power to control whole regional telecommunications networks capable of delivering broadband content on a scale similar

to that of telephone and cable networks. Traditionally, ITFS licensees often have undertaken such tasks in cooperation with for-profit entities that lease ITFS capacity. However, it is their licenses that have given the educators a seat at the table, and a crucial voice as to how these networks are designed, deployed, and used.

Even if there arrives a substitute for the delivery of legacy ITFS services, there will be no substitute for having educators hold ITFS licenses.

The NPRM expresses a desire that ITFS and MMDS spectrum be used efficiently, stating that "[i]nnovation could proceed more smoothly if commercial operators were able to aggregate spectrum in the 2500-2690 MHz band and purchase ITFS stations, which would allow them to exercise direct ownership control." (This thinking, by the way, implicitly endorses IMWED's view that holding licenses is quintessential.)

While it is probably correct that many commercial entities would prefer to own ITFS spectrum rather than lease it, the ITFS service is an early example of the success of secondary markets; in fact, commercial wireless operators have long aggregated significant spectrum portfolios through leasing excess ITFS capacity, often combining it with owned or leased MDS capacity. Further, the fact that much ITFS spectrum is encumbered by long-term contracts means that a prospective commercial purchaser (other than the present lessee) would have little incentive to buy, as it would not be able to gain access to the frequencies for many years.

In sum, while we see a great deal to lose, we see minimal efficiency gain in permitting ITFS licenses to be held by commercial entities.

---

[6] NPRM at paragraph 114.

Given that we recommend that only noncommercial entities be entitled to hold ITFS spectrum, it follows that if ITFS spectrum is to be auctioned, only ITFS-eligible entities should be entitled to bid on it.[7]

The Commission needs to recognize that because of excess capacity considerations, ITFS spectrum auctions are likely to become contests not between licensees, but between commercial lessees. The most discordant result will occur when one bidder is backed by a for-profit lessee, while its competitor attempts to secure spectrum from its own financial resources. Under these circumstances, the commercially-backed surrogate is much more likely to secure the spectrum than the entity which plans only educational uses for its channels. Another skewed outcome is likely when multiple ITFS licensees are backed by different commercial parties, and the auction winner is determined by which for-profit entity has the deepest pockets.

To prevent these undesirable outcomes, the Commission should require that ITFS bidders pay for spectrum from their own funds, without using money obtained from third parties.

II. The Commission's Rules Should be Amended to Increase the Minimum Educational Service that ITFS Licensees are Required to Render.

In the NPRM, the Commission gives a trenchant summary of its gradual, but steady, loosening of restrictions on the commercial use of ITFS channels.[8] It observes that the current 5% minimum educational requirement for ITFS is little higher than the

[7] There are, of course, already a comparatively small number of commercial entities licensed to operate on ITFS frequencies, and they may seek to expand their coverage by applying for "white space" that is currently outside of all protected service areas. IMWED recommends that these present licensees be grandfathered, but prohibited from acquiring ITFS spectrum outside their current service areas.

[8] "One step at a time, over a fifteen year period, we reduced the educational obligations of ITFS operators to a minimal level, ultimately allowing them to lease all but a small fraction of their capacity to commercial operators." NPRM, paragraph 109.

4% requirement for the Direct Broadcast Satellite service, where licensees are commercial entities.[9]

IMWED believes that the comparison between DBS and ITFS is instructive, but perhaps not in the manner the NPRM posits. DBS licensees---commercial entities---have an incentive to keep the educational uses of their capacity to the regulatory minimum. ITFS entities, by contrast, often make arrangements to use more than the minimum for educational purposes.

Nonetheless, IMWED believes that the Commission has gone too far in loosening regulation of ITFS. We believe that minimum educational usage, as applied to data service, should be raised.

This is not a new issue. Indeed, it arose in the Commission's 1998 fixed two-way proceeding, which for the first time established standards for data uses on ITFS spectrum.[10] At that time, the Commission considered a compromise proposal reached by the National ITFS Association, the principal trade group representing ITFS licensees, and the Wireless Communications Association, an organization representing commercial spectrum interests. These two groups' proposal revolved around the concept of recapture, by which spectrum initially devoted to commercial use can be reclaimed by an ITFS licensee and devoted to educational uses.

Though the Fixed Two-Way Order praised the joint industry compromise, which it referred to as the *Joint Statement*, the Commission rejected many of the compromise's

---

[9] *Id*., paragraph 116.

[10] Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions, *Report and Order*, 13 FCC Rcd 19112. ("Fixed Two-Way Order.")

key recommendations, and, instead, established a 5% minimum educational reservation for data service.[11]

Under the *Joint Statement* plan, the Commission was to establish a "floor" reservation level, as follows: initially, as little as 5% of capacity could be devoted to education, though the licensee had to retain the ability to reclaim at least a further 5% of capacity annually until such time as it used 25% of channel capacity for education.

There is much to commend in this compromise. If one fears that a licensee at first might not be able to utilize a full 25% of capacity productively, this regime avoids the inefficiency of having a significant amount of throughput remain idle. The fact that recapture can be gradual protects an operator---and its customers---from sudden swings in available capacity. Most importantly, this form of reservation insulates the public and the educational community from a licensee's possible mistake in locking up spectrum for 15 years under a contract that designates a maximum of 5% of capacity for education, despite a growing need for more.[12]

We believe that the *Joint Statement* further illustrates the difference between a commercial service like DBS and an educational service like ITFS. A commercial service would neither seek nor utilize a recapture-based formula, as its incentives are to minimize educational capacity; not so with a noncommercial service like ITFS.

It appears to IMWED, that the Commission is of two minds. One attitude is exemplified by the Fixed Two-Way Order, which rejected the consensus recommendation for a higher level of reservation. The other is exemplified by parts of

---

[11] Fixed Two-Way Order, paragraph 89.

[12] There is nothing in the NIA-WCA compromise that would keep a licensee and operator from negotiating a higher educational set-aside. Rather, the preceding was to be an FCC-mandated "floor," below which no contract could go.

the NPRM, which appear to question whether ITFS is of educational value, given that so little of its capacity is required to be used for educational purposes.[13]

As stated above, we believe that the Commission should establish a higher floor than is now contained in its Rules, and, instead, should now accept the core recommendations of the *Joint Statement*. Our thinking is that the Commission should regulate ITFS licensees for the benefit of the public and education, which have a great deal at stake. While it is in the public interest for licensees and operators to have flexibility, and to enter into efficient secondary market transactions, it is not in the public interest to allow a licensee to indenture 95% of its capacity for 15 years.[14]

IMWED believes that the public should continue to have access to, and the Commission should continue to monitor, ITFS excess capacity agreements. Therefore, we recommend that licensees continue to be required to file such agreements with the Commission.[15] We believe that the full text of such agreements should be submitted, without expurgation. However, in order to avoid delay in the provision of service to the public, we do not recommend that licensees be required to postpone commercial use of excess capacity until the Commission has approved such agreements.

---

[13] See, for instance, the NPRM at paragraph 116.

[14] IMWED is aware that parties have entered into excess capacity agreements in accordance with the rules set forth in the Fixed Two-Way Order. These agreements should be grandfathered, and the more stringent standards should be applied upon their expiration or termination.

[15] We recognize that this recommendation is contrary to the Commission's proposal in the NPRM. See NPRM, paragraph 118. In the event that the Commission ceases to require the routine submission of these documents, we believe that licensees' file copies should be available for public, as well as FCC, inspection; since the Commission's requirements concerning excess capacity agreements are for the public's benefit, the public should have the ability to monitor their implementation.

III. The Commission Should Establish a "Across-the-Board" Bandplan That Leads to Low-Power Two-Way Uses of ITFS and MMDS Spectrum on All Channels.

The Commission has sought comment on various bandplan options, including one proposed by the Wireless Communications Association International ("WCAI"), the National ITFS Association ("NIA"), and the Catholic Television Network ("CTN). This bandplan was contained in a voluminous document WCAI, NIA, and CTN filed with the Commission on October 7, 2002, and supplemented thereafter through subsequent filings; its formal title was *A Proposal for Revising the MDS and ITFS Regulatory Regime*, though it is frequently referred to as the White Paper. The NPRM refers to the White Paper's proposed bandplan as the Coalition Bandplan, and its proponents as the Coalition. In addition, the Commission requests comments on several other possible bandplans.[16]

As noted in the NPRM, the Coalition Bandplan contains seven 6 MHz channels in the center, referred to in the White Paper as the Mid Band Segment ("MBS"). These channels are intended to continue high power operations, chiefly for the traditional video delivery, though the Coalition avers that there are other possible uses. The MBS is flanked by guard bands on either side and swathes of spectrum above (Upper Band Segment or UBS) and below (Lower Band Segment or LBS) which are contemplated for only low-power cellularized use of the sort that is needed for mobile and data uses.[17]

For the most part, the Coalition Bandplan proposes to allot LBS, MBS, and UBS spectrum in the same order of frequencies that exist today; that is, the A group is lowest in frequency, followed by the B group, and so on. There is one exception, in which the

[16] NPRM at paragraphs 49-57.
[17] White Paper at p. 12.

Coalition Bandplan calls for the H group to be lower in frequency than the G group in the UBS.

Under the White Paper proposal, the present bandplan and ITFS/MMDS operations would continue in a given geographic region until a party (known as a Proponent) comes forward to pay the cost of transitioning to the new bandplan. Thereafter, traditional high power operations in the region, except for MBS operations, would be shut down.

The bedrock of a functional new bandplan is the de-interleaving of spectrum. Interleaved ITFS/MMDS channels and overly restrictive first-adjacent channel interference rules have stymied two-way development in the 2.5 GHz band, as it is nearly impossible to obtain necessary authorizations unless neighboring licensees are willing to waive their interference protections.[18]

The Coalition bandplan recommends partially de-interleaving spectrum. Each four-channel ITFS and MMDS licensee would receive 16.5 MHz of deinterleaved spectrum in either the LBS or UBS, get a single 6 MHz channel in the MDS, and surrender 1.5 MHz as a contribution to the guard bands that flank the MBS.[19]

Though it is along the right lines, Coalition Bandplan does not provide either licensees or the public with the full benefits of deinterleaving, due to the assignment of an MBS and the concomitant guard bands. Were it not for these features, deinterleaving would give each four channel ITFS/MMDS group 24 contiguous megahertz.[20] The

---

[18] These difficulties are aptly described in the White Paper, pp. 9-10.

[19] Though nominally, an ITFS licensee would be assigned spectrum in nominally usable "transition bands," in practice, uses of such bands would be secondary and highly restricted. Also, in addition to this "main channel" spectrum, the White Paper calls for licensees to be assigned 0.5 MHz designated as I-channels. I-channels are located above the highest of the main channels.

[20] Or 24.5 MHz, if the I channels were melded with main channels.

inclusion of the MBS and guard bands mean that the spectrum available for two-way operation is reduced by nearly one-third. As well, it is possible that additional restrictions will apply to UBS and LBS spectrum immediately adjacent to the MBS guard bands, further decreasing spectrum efficiency.

Many ITFS licensees are willing to contemplate a substantial reduction in long-term spectrum utility because their current instructional offerings are delivered in video form via high-power facilitiesCindeed, save for this fact, we doubt that the Coalition Bandplan would have contained a mid-band segment at all.

In essence, the bandplan decisions pit ITFS's present against its future. Today, the educational video offerings on ITFS are extensive, and of strong value. Yet one-way video usage is likely to decline in importance due to a number of factors. Wired and wireless Internet delivery of instructional content is growing, and the cellularized networks the Commission wishes to foster will deliver video content by streaming technology. The problem is that streaming video---though improving---is not yet "broadcast quality," and it may take years for cellularized networks to achieve the coverage today afforded by high power ITFS facilities; indeed, in rural areas, high-power facilities may remain the most efficient mode of delivery indefinitely.

However, telecommunications policy needs to be guided by the public interest over the long term, not merely the present. Clearly, there is a very important public interest benefit to be secured by efficient use of spectrum, and such is to be derived only from a non-segmented bandplan with full de-interleaving.[21]

The Coalition maintains that there is flexibility in the use of MBS channels, in that one could use them for high power data or swap them for another licensee's LBS or

UBS channel. The White Paper also allows for low power uses of MBS channels if one obtains the consent of wide variety of ITFS licensees operating out to a distance of 100 miles.[22]

All these assertions are unsatisfactory. First of all, if high-power data services were broadly effective, there would be no need for LBS or UBS capacity. Second, there is no evidence that a significant number of licensees will be interested in swapping low power channels for high power channels. Third, if interference consents could lead to the effective roll-out of data services, there would be no need for a comprehensive re-write of the ITFS/MMDS technical rules. Finally, even if MBS channels could be used for cellularized data purposes, a licensee's MBS channel is isolated from its LBS or UBS capacity in most cases, meaning that the spectrum alignment will never be as efficient as if the MBS 6 MHz had been deployed according to an "across-the-board" plan. Similarly, even if a licensee obtains a fourth UBS or LBS channel through a swap, in most cases such a channel would not be contiguous with its main UBS/LBS allocation.

IMWED members appreciate the bandplan dilemma. Our ITFS systems currently deliver educational video services, and we have many schools that depend on them. None of our systems is now used for educational data purposes. Like most ITFS licensees, we are very reluctant to abandon proven educational services until there is a ready means to replace them. It was for these reasons that IMWED members originally supported the Coalition Bandplan.

---

[21] This "across-the-board" approach to the bandplan is discussed in paragraphs 55 to 57 of the NPRM.
[22] White Paper, pp. 13, 16-17.

After long study and debate of the White Paper=s fine print, however, we conclude that in many cases ITFS licensees in fact will lose their ability to deliver video if the White Paper's recommendations are adopted.

The most important single trap door contained in the White Paper is that the proposals do not accommodate a change of high power transmitter site. Over the long term, we believe that many, and perhaps most, ITFS transmission sites will have to be moved. Because transmitter sites generally are provided by an excess capacity lessee, access to these sites usually ends if the lease expires or is terminated. Further, events like the recent WorldCom and Nucentrix bankruptcies underline the fact that large numbers of excess capacity agreements are subject to unpredictable termination.

However, because of legacy interference rules, ITFS licensees generally are unable to move their transmission sites. Recently, a site change of less than 1,000' drew a petition to deny alleging first adjacent channel interference.[23] Under current Section 74.932(d) FCC rules, the license for any ITFS channel that is off the air for a year must be forfeited, so the prolonged loss of a transmission site is fatal. Even if the Commission eliminates Section 74.932(d)---as IMWED recommends---there is no utility in devoting 6 MHz to a mid-band channel if that channel cannot be operated.

IMWED members have brought these issues to the attention to ITFS representatives within the Coalition. Though it has been difficult to secure improvements in the White Paper proposals by this route, we are given to believe that further amendments to the Coalition's interference recommendations may ensue. We hope that will be the case, and look forward to extending our analysis through reply comments.

[23] The petitioner (a WorldCom subsidiary) was a former lessee that withdrew access to a tower following expiration of an excess capacity lease, and then petitioned to deny a move to a nearby tower.

The White Paper gives the Proponent the wide-ranging ability to dictate the terms of transition, subject to a variety of Asafe harbor@ provisions that give latitude to the Proponent, and impose significant risks on licensees that challenge the Proponent=s plans. The White Paper=s orientation is to carry out transitions quickly, and at minimal cost to the Proponent. The specifics of its transition recommendations are very detailed and unnecessarily convoluted.[24] Indeed, it seems as if the authors have tried to imagine every permutation that could work to a Proponent's disadvantage, and block it---in the process both creating an arcane system and opening the possibility of wide-ranging abuse by Proponents. However, because essential concepts, such as the "reasonableness" of a transition plan, remain vague, we believe that there remains a substantial likelihood that the Commission would have to adjudicate numerous transition disputes.

The ITFS Spectrum Development Alliance, an organization to which IMWED members also belong, submitted a detailed---and negative---critique of the White Paper's transition recommendations when the Commission requested public comment on them. Portions of those comments are attached hereto as Appendix A

In sum, while the White Paper holds out the supposed promise that current instructional video operations can continue for the long term, we have concluded that this promise will in many cases prove illusory. This fact tips the balance, in our view, and, in combination with the advantages of an "across-the-board" regime, has persuaded us to oppose the Coalition Bandplan.

---

[24] These recommendations are set forth in Appendix B to the White Paper. Excluding attachments, they occupy 29 pages. They include nine "safe harbors" to ease the way for Proponents, and, at the same time, often disadvantage ITFS licensees. Appendix B lays out a dispute resolution system, which imposes large risks on licensees that challenge a transition process and much lower risks on the Proponent. IMWED submits that it is better for the Commission to establish an "across-the-board" system that is simple and offers few opportunities for disputes.

Once we reached this conclusion, our first thought was to recommend conversion to low-power two-way operation on all 2.5 GHz frequencies by a date certain; however, we soon realized that one cannot predict the speed of conversion to cellularized operations in the band, and that there is no point to shutting down valuable service before any substitute is in prospect. Consequently, we instead recommend that current operations be allowed to continue until there is at least one low-power two-way 2.5 GHz system in operation within 100 miles. This means that in rural areas, high-power ITFS service is likely to continue for the long term. We also propose an inverse of the White Paper's recommendation for flexibility; we believe that high-power operation should be allowed indefinitely if all affected ITFS licensees within 100 miles consent.

An across-the-board bandplan provides the simplest transition. Since high power operations in a region would cease simultaneously, there would be no need for a Proponent, and no opportunity for the sort of mischief that can result from the White Paper's Appendix B prescriptions. Finally, there are also no "brute force overload" issues in a regime that consists solely of low power operations.

It has been claimed that the Coalition Bandplan is necessary to support frequency division duplex ("FDD") technology. We disagree with this assertion. While the MBS may provide a convenient means of separating upstream from downstream transmission in an FDD system, it is by not the only means of accomplishing this end. For instance, since ITFS/MMDS channel groups are generally 24 MHz wide, a separation of any two groups is a ready source of 48 MHz in frequency separation.

Finally, IMWED believes that, contrary to the Coalition Bandplan, H channels should be located above G channels in frequency, rather than below. We see no benefit

in the transposition, and suspect that it is intended to put the G group closer to high power radar signals that operate in the region above the end of the 2.5 GHz band.

IV. IMWED Supports the White Paper Recommendations Regarding Geographical Service Areas, Spectral Mask, and Co-Channel Interference.

IMWED supports the White Paper's recommendations that existing protected service areas---which often overlap---be converted to exclusive geographic service areas. The region within overlapping PSAs has become a "no man's land" where neither licensee is able to secure authorizations without the other's consent. This is a prescription for gridlock and spectrum inefficiency that is cured by the GSA concept.

If a licensee secures an exclusive GSA, the next question is how that territory is to be protected against its neighbors and how the neighbors are to be protected from the GSA occupant. The use of a spectral mask---as set forth in the White Paper and its supplements--- is the logical way to deal with adjacent-channel interference issues. As well, the sorts of recommendations that are elaborated in the White Paper supplements appear to us to be a good solution to co-channel interference issues.[25]

We agree with the White Paper's authors that the regulatory regime for ITFS and MMDS should be technology agnostic,[26] accommodating both frequency and time division duplex, even though such flexibility means that interference rules become more complex. We point out that the use of 24 MHz blocks of contiguous ITFS and MMDS spectrum allows for more room for licensees to deal with the challenges that accompany employing non-synchronized systems on adjacent channels.

---

[25] See the original White Paper at pp. 26-27 and the first Coalition supplement at pp. 3-4.
[26] White Paper, p. 11.

V. IMWED Opposes the Operation of Unlicensed "Underlays" on ITFS and MMDS Frequencies.

The NPRM requests comment on the prospect that unlicensed "underlay" uses could co-exist with licensed operation on ITFS and MMDS channels.[27] The Commission notes that industry giants Intel and Microsoft support this concept. [28]

While IMWED agrees that there is proven value to the unlicensed operation of RF devices, we disagree that it is easy or prudent to mix unlicensed and licensed spectrum; each has its advantages, but, if overlaid, it is possible that the controlled interference environment that is the essence of licensure will be lost permanently.

The chief benefit of unlicensed spectrum is that it allows rapid deployment and technical innovation. The 2.4 GHz unlicensed band has already spawned one runaway success in Wi-Fi, though this technology normally provides data connection over a radius of only about 100 meters. However, unlicensed operation for wide area networks is much more limited. Indeed, IMWED members have been contacted repeatedly by WAN operators that got their start on license-exempt bands and seek to switch to licensed spectrum.

In contrast, the chief benefit of licensed spectrum is that it offers a known interference environment as the basis for long-term technical planning and large capital investments. It is precisely this stability that would be undermined by sharing with unlicensed transmitting devices.

---

[27] NPRM, paragraphs 143 to 148.
[28] *Id*., paragraph 143.

The FCC's Spectrum Policy Task Force Report ("SPTF Report"), though favorably disposed to unlicensed uses, acknowledges potential problems. The SPTF Report recognizes that once unlicensed devices enter the market, "it may be difficult legally or politically to shut down their operations even if they begin to cause interference or otherwise limit the licensed user's flexibility."[29]

We point out that the hoped-for revolution in 2.5 GHz spectrum will rely on new technology, much of which is still being refined; its technical characteristics are thus unknown, and it is not clear how much interference protection will be required. However, it appears that extensive interference protection will be needed, as portable mobile devices typically transmit at very low powers, requiring sensitive receivers at response hubs. This is a very different environment than, for example, broadcast television spectrum.

IMWED believes that the unlicensed use of ITFS/MMDS spectrum should be considered only when two-way licensed technologies are well established, and sharing can be thoroughly tested under "real world" conditions.

Currently, it is difficult to attract investment capital to new telecommunications ventures in general, and because high-capacity cellularized systems require many base stations, they are likely to be especially capital-intensive. This inherent challenge will be compounded if the Commission creates technical uncertainty by unleashing an unlimited number of unlicensed devices in the ITFS and MMDS band. While the Commission understandably wishes to foster spectrum efficiency and flexibility, this aim will be frustrated if primary users of spectrum are unable to obtain the money they need to build out their systems due to an insecure interference environment.

---

[29] SPTF Report, p. 58.

Respectfully submitted,

THE ITFS/2.5 GHz MOBILE WIRELESS ENGINEERING & DEVLOPMENT ALLIANCE, INC.

By: /s/
John B. Schwartz, Director
John Primeau, Director

The ITFS/2.5 GHz Mobile Wireless Engineering & Development Alliance, Inc.
P.O. Box 6060
Boulder, CO 80306
(303) 442-2707

Dated: September 8, 2003

Appendix A to the Comments of the ITFS/2.5 GHz Mobile Wireless Engineering & Development Alliance, Inc.

[Derived from the Comments of the ITFS Spectrum Development Alliance on the White Paper's Transition Proposals]

A number of important problems revolve around the transition process, and the role of the Proponent as set forth in Appendix B of the White Paper.

The Alliance's views on the transition process are informed by its members' dealings with commercial wireless communications operators, which generally have performed a Proponent-like role in technical coordination in the metropolitan areas they serve. For instance, operators have often secured a common tower site for ITFS and MMDS licensees in a given metropolitan area, typically arranging to multiplex the output of licensees' transmitters through either one or two shared transmitting antenna systems. They often have provided in-kind engineering support, both in designing and maintaining transmission facilities.

Often, Alliance members have had constructive relationships with operators in the communities they serve, but there have been instances of bullying and bad faith on the part of operators as well…

The Alliance does not believe that we---or the Commission---should presume bad faith by every Proponent in a bandplan transition. The fact is, however, that WorldCom and other wireless cable operators have used the Commission's rules as weapons. They can be expected to continue to misuse the regulatory process unless the opportunity for

abuse---and the rewards that come with it---are eliminated. Just as the White Paper includes measures designed to prevent greenmail and other abuses by licensees, the Alliance believes that rules governing the transition must also guard against bad faith and bad acts by Proponents.

The White Paper's Appendix B regime revolves around the "reasonableness" of a Proponent's transition plan. Though it proposes nine "safe harbors" to shelter Proponents from accusations of unreasonableness, the White Paper does not attempt to enunciate a standard of reasonableness upon which both licensees and Proponents can rely. This is a failing that will impose added burdens on the Commission to resolve disputes that might never had arisen if clear standards had been enunciated, and also will increase the danger of abuse on the part of Proponents.

The risk of abuse by Proponents is further increased by the fact that the White Paper's process for adjudicating the reasonableness of transition plans is not even-handed. If a Proponent loses such an adjudication, its risk is capped at the licensee's litigation cost. However, should a licensee lose in such a proceeding, its potential liability is much higher---the incremental difference in the cost of the Proponent's plan and the licensee's. Keep in mind that the typical ITFS licensee is a non-profit or governmental organization that will not have financial reserves to pay for an adverse judgment, and thus will be deterred from contesting an unreasonable plan, no matter how unlikely the prospect of losing.

Further, if a licensee produces a counterproposal, the Commission would look only to the Proponent's plan and decide whether it is "reasonable." Quite simply, if the Proponent manages to adduce a "reason" for the elements of its plan---a task which takes

little creativity---the Proponent's plan arguably prevails. We believe that adjudications should compare the reasonableness of both the Proponent's proposal and a licensee's counterproposal.

Though there are a number of Proponent-centered "safe harbors," the White Paper sets forth no criteria to assist parties in crafting reasonable proposals, or to guide the Commission in making a "reasonableness" determination. Further, given the complexity of the task, a licensee should be allowed more than the White Paper's recommended 20 days in which to review the plan, evaluate it, negotiate with the Proponent, and develop a counterproposal, if needed. [White Paper, p. 20.] Three weeks are simply not enough time, and such a short period will increase the Commission's involvement in resolving transition plan disputes, as haste will limit negotiations between the parties regarding a transition plan.

Also, while the Alliance does not object to the idea that later commercial entrants should reimburse the Proponent for a pro-rata share of transition expenses, the White Paper does not set forth the mechanisms for such a process in nearly enough detail. Specificity is important in this context, as a Proponent which has launched two-way service will have every incentive to obstruct and overcharge a newcomer…

The White Paper specifies that ITFS licensees will lose their legal rights to downconverter upgrades if they fail to supply information to the Proponent within a defined time frame. [White Paper, p. 36. ("In the absence of a response, the requesting licensee should be permitted to proceed with its proposal without having to provide protection to eligible [ITFS] receive sites.")] However, other important information sharing requirements that apply equally to ITFS and MMDS do not lead to the loss of a

licensee's legal rights if such licensee does not provide technical information by a date certain. [White Paper, pp. 24-25. ("While WCA, NIA, and CTN anticipate that the vast majority of licensees will cooperate in informal information exchanges, there is concern that an uncooperative license in the vicinity of a given market could have a sutstantial adverse impact on the ability of MDS/ITFS to provide that market with broadband services.") As mentioned above, this passage does not g o on to recommend the termination of legal rights should the MDS or ITFS licensee fail to supply the needed information by a deadline.]

The Alliance agrees that it is important that licensees supply technical information promptly, but believes that both the requirements and sanctions applicable to ITFS and MMDS licensees should be uniform. We do not think that it is an appropriate penalty for licensees to lose their legal rights due to the failure to respond to requests for information, given that other sanctions are applicable.